



The effects of climatic factors on the distribution and abundance of Japanese encephalitis vectors in Kurnool district of Andhra Pradesh, India

Author(s): Murty US, Rao MS, Arunachalam N
Year: 2010
Journal: Journal of Vector Borne Diseases. 47 (1): 26-32

Abstract:

BACKGROUND & OBJECTIVES: Climatic attributes have been associated with relative mosquito abundance and transmission of mosquito borne infections in many parts of the world, especially in warm and tropical climatic regions. The main objectives of this study were to assess the change in seasonal pattern of Japanese encephalitis (JE) vectors, their density, to elucidate whether the lagged climate variables (precipitation, temperature and humidity) are associated with JE vector density, and to determine if temperature and precipitation are similarly important for the rise in the number of potential mosquito vectors for JE virus in the temperate climate of andhra Pradesh, India. **METHODS:** Mosquito samples were collected from Kurnool district of andhra Pradesh using hand catch and light-trap methods during 2002 to 2006. The type and abundance of recovered species were compared to ecological correlates. In each geographic area, temperature and precipitation are the two possible proxy variables for mosquito density, in conjunction with other seasonal factors for JE epidemics. **RESULTS:** Out of the various mosquito species collected, *Culex gelidus* and *Cx. tritaeniorhynchus* were noticed in high numbers. There was considerably high prevalence of *Cx. gelidus* (68.05%) in urban area than in rural areas whereas, *Cx. tritaeniorhynchus* (57.51%) was found to be more in rural areas than in the urban area. It is noticed that the factors such as rainfall and temperature were found to be correlated with the per man hour (PMH) density, whereas the humidity was inversely correlated with the PMH. **INTERPRETATION & CONCLUSION:** The environmental and eco-climatic factors are assisting in enhancing the breeding of these mosquitoes in Kurnool district of andhra Pradesh, India. Both *Cx. tritaeniorhynchus* and *Cx. gelidus* are quite adaptable to these environmental conditions and this necessitates immediate control measures in both rural and urban areas of Kurnool district.

Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker



Climate Change and Human Health Literature Portal

Exposure : ☒

weather or climate related pathway by which climate change affects health

Precipitation, Temperature

Geographic Feature: ☒

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☒

resource focuses on specific location

Non-United States

Non-United States: Asia

Asian Region/Country: India

Health Impact: ☒

specification of health effect or disease related to climate change exposure

Infectious Disease

Infectious Disease: Vectorborne Disease

Vectorborne Disease: Mosquito-borne Disease

Mosquito-borne Disease: Viral Encephalitis

Mitigation/Adaptation: ☒

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type: ☒

format or standard characteristic of resource

Research Article

Timescale: ☒

time period studied

Time Scale Unspecified